Optimizing Pain Management: A Systematic Review and Meta-Analysis of Opioid-Sparing and Opioid-Free Analgesia in Minimally Invasive Colorectal Surgery

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Introduction

- **Opioid** medications are commonly used in the acute postoperative period, but linked to adverse effects like **nausea**, **hyperalgesia**, and **increased opioid consumption** post-surgery.
- ERAS protocols promote **opioid-sparing** and **opioid-free** analgesia as potential solutions to reduce opioid-related complications.
- We performed a meta-analysis comparing opioid vs. opioid-sparing perioperative analgesia in MIS colorectal surgeries.

Methods

- We searched Cochrane, Embase, and PubMed for **studies comparing opioid-sparing with opioid-based analgesia** in MIS colorectal procedures.
- **Primary outcomes** included visual analog scale (VAS) at 24h and 48h postoperative, opioid consumption (morphine equivalents), and hospital length of stay (LOS).
- **Secondary outcomes** comprised complications (nausea, pruritus, overall complications, postoperative ileus, readmission, and mortality).

21,216 patients undergoing MIS colorectal procedures*

- 8 studies included
- 2 RCTs
- 6 cohort studies

1,345 studies screened

**1,840 (8.6%) = Opioid-sparing*

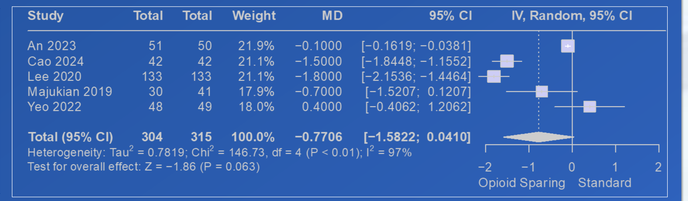
MAIN FINDINGS

✓ **Postoperative VAS Scale:**

VAS 24h:



Vas 48h:



Reduce opioid consumption:

MD -29.7mg of morphine equivalents [-45.2 to -14.1]; p<0.001

No differences with statistical significance were found for overall postoperative complications, nausea, pruritus, ileus, readmission, or mortality rates.

Conclusion

- No statistically or clinically relevant difference was found between the groups for the **postoperative VAS** pain scale, highlighting a possible **similarity in analgesic effects** of combined **opioid sparing** strategies and **opioids**.
- Opioid-sparing regimens were associated with **reduced opioid consumption**.
- However, we did not find statistically significant differences in common opioid side effects when employing opioid-sparing strategies.

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